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## SEQUENCE LISTING

&lt;110&gt; LIU et al.

&lt;120&gt; M-CSF-SPECIFIC MONOCLONAL ANTIBODY AND USES THEREOF

&lt;130&gt; 21601.003

&lt;140&gt; To be assigned

&lt;141&gt; 2005-01-06

&lt;150&gt; US 60/535,181

&lt;151&gt; 2004-01-07

&lt;150&gt; US 60/576,417

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&lt;160&gt; 137

&lt;170&gt; PatentIn version 3.3

&lt;210&gt; 1

&lt;211&gt; 1401

&lt;212&gt; DNA

&lt;213&gt; Mus musculus

&lt;400&gt; 1

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tgtactgtca ctgactactc catcaccagt gattacgcct ggaactggat acggcaattc	180
ccaggaata aacttgagtg gatggggtag ataagctaca gtggtagcac ttcctacaat	240
ccatctctca aaagtcggat ctccatcact cgagacacat ccaagaacca gttcttctctg	300
cagctgaact ctgtgactac tgaggacaca gccacatatt actgtgcatc cttegactat	360
gcccacgcca tggattactg gggccaaggg acttcgggtca ctgtctcttc cgccaaaaca	420
acagcccat cggtctatcc actggccctc gtgtgtggag atacaactgg ctctcgggtg	480
actctaggat gcctgggtcaa gggttatttc cctgagccag tgaccttgac ctggaactct	540
ggatccctgt ccagtgggtgt gcacaccttc ccagctgtcc tgcagtctga cctctacacc	600
ctcagcagct cagtgactgt aacctcgagc acctggccca gccagtccat cacctgcaat	660
gtggcccacc cggcaagcag caccaagggtg gacaagaaaa ttgagcccag agggcccaca	720
atcaagccct gtcttccatg caaatgccca gcacctaac tcttgggtgg accatccgtc	780
ttcatcttcc ctccaaagat caaggatgta ctcatgatct cctgagccc catagtcaca	840
tgtgtggtgg tggatgtgag cgaggatgac ccagatgtcc agatcagctg gtttgtgaac	900
aacgtggaag tacacacagc tcagacacaa acccatagag aggattacaa cagtactctc	960
cgggtgggtca gtgccctccc catccagcac caggactgga tgagtggcaa ggagttcaaa	1020
tgcaagggtca acaacaaaga cctcccagcg cccatcgaga gaaccatctc aaaacccaaa	1080

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gggtcagtaa gagctccaca ggtatatgtc ttgcctccac cagaagaaga gatgactaag 1140
aaacaggtca ctctgacctg catggtcaca gacttcatgc ctgaagacat ttacgtggag 1200
tggaccaaca acgggaaaac agagctaaac tacaagaaca ctgaaccagt cctggactct 1260
gatggttctt acttcatgta cagcaagctg agagtggaaa agaagaactg ggtggaaaga 1320
aatagctact cctgttcagt ggtccacgag ggtctgcaca atcaccacac gactaagagc 1380
ttctcccgga ctccgggtaa a 1401

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<210> 2
<211> 447
<212> PRT
<213> Mus musculus

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<400> 2

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Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1 5 10 15

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Ser Leu Ser Leu Thr Cys Thr Val Thr Asp Tyr Ser Ile Thr Ser Asp
20 25 30

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Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu Trp
35 40 45

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Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu
50 55 60

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Lys Ser Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe Phe
65 70 75 80

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Leu Gln Leu Asn Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr Cys
85 90 95

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Ala Ser Phe Asp Tyr Ala His Ala Met Asp Tyr Trp Gly Gln Gly Thr
100 105 110

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Ser Val Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro
115 120 125

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Leu Ala Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly
130 135 140

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Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Leu Thr Trp Asn
145 150 155 160

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Ser Gly Ser Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
165 170 175

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Ser Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Ser Thr  
 180 185 190

Trp Pro Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser Ser  
 195 200 205

Thr Lys Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys Pro  
 210 215 220

Cys Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro Ser  
 225 230 235 240

Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu  
 245 250 255

Ser Pro Ile Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro  
 260 265 270

Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala  
 275 280 285

Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val  
 290 295 300

Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe  
 305 310 315 320

Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr  
 325 330 335

Ile Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu  
 340 345 350

Pro Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys  
 355 360 365

Met Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn  
 370 375 380

Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp  
 385 390 395 400

Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys  
 405 410 415

Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly  
 420 425 430

Leu His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly  
 435 440 445

<210> 3  
 <211> 702  
 <212> DNA  
 <213> Mus musculus

<400> 3  
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 gacatcttgc tgactcagtc tccagccatc ctgtctgtga gtccaggaga aagagtcagt 120  
 ttctcctgca gggccagtca gagcattggc acaagcatac actggtatca gcaaagaaca 180  
 aatggttctc caaggcttct cataaagtat gcttctgagt ctatctctgg gatcccttcc 240  
 aggttttagtg gcagtggatc agggacagat tttactctta gcatcaacag tgtggagtct 300  
 gaagatattg cagattatta ctgtcaacaa attaatagct ggccaaccac gttcggcggg 360  
 gggacaaagt tggaaataaa acgggctgat gctgcaccaa ctgtatccat cttcccacca 420  
 tccagtgagc agttaacatc tggaggtgcc tcagtcgtgt gcttcttgaa caacttctac 480  
 cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg 540  
 aacagttgga ctgatcagga cagcaaagac agcacctaca gcatgagcag caccctcacg 600  
 ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca 660  
 tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt 702

<210> 4  
 <211> 214  
 <212> PRT  
 <213> Mus musculus

<400> 4

Asp Ile Leu Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly  
 1 5 10 15

Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Ser Ile Gly Thr Ser  
 20 25 30

Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile  
 35 40 45

Lys Tyr Ala Ser Glu Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Ser  
 65 70 75 80

Glu Asp Ile Ala Asp Tyr Tyr Cys Gln Gln Ile Asn Ser Trp Pro Thr

85 90 95  
 Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Asp Ala Ala  
 100 105 110  
 Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu Thr Ser Gly  
 115 120 125  
 Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile  
 130 135 140  
 Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu  
 145 150 155 160  
 Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser  
 165 170 175  
 Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr  
 180 185 190  
 Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser  
 195 200 205  
 Phe Asn Arg Asn Glu Cys  
 210  
 <210> 5  
 <211> 109  
 <212> PRT  
 <213> Mus musculus  
 <400> 5  
 Asp Ile Leu Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly  
 1 5 10 15  
 Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Ser Ile Gly Thr Ser  
 20 25 30  
 Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile  
 35 40 45  
 Lys Tyr Ala Ser Glu Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Ser  
 65 70 75 80  
 Glu Asp Ile Ala Asp Tyr Tyr Cys Gln Gln Ile Asn Ser Trp Pro Thr

85

90

95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala  
 100 105

&lt;210&gt; 6

&lt;211&gt; 118

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 6

Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
 1 5 10 15

Ser Leu Ser Leu Thr Cys Thr Val Thr Asp Tyr Ser Ile Thr Ser Asp  
 20 25 30

Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu Trp  
 35 40 45

Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu  
 50 55 60

Lys Ser Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe Phe  
 65 70 75 80

Leu Gln Leu Asn Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr Cys  
 85 90 95

Ala Ser Phe Asp Tyr Ala His Ala Met Asp Tyr Trp Gly Gln Gly Thr  
 100 105 110

Ser Val Thr Val Ser Ser  
 115

&lt;210&gt; 7

&lt;211&gt; 256

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 7

Met Thr Ala Pro Gly Ala Ala Gly Arg Cys Pro Pro Thr Thr Trp Leu  
 1 5 10 15

Gly Ser Leu Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser Ile Thr  
 20 25 30

Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly His Leu  
 35 40 45

Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln  
50 55 60

Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro Val Cys  
65 70 75 80

Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu Asp Thr  
85 90 95

Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu  
100 105 110

Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp Tyr Glu  
115 120 125

Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro Leu Gln  
130 135 140

Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn Leu Leu  
145 150 155 160

Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser Phe Ala  
165 170 175

Glu Cys Ser Ser Gln Gly His Glu Arg Gln Ser Glu Gly Ser Ser Ser  
180 185 190

Pro Gln Leu Gln Glu Ser Val Phe His Leu Leu Val Pro Ser Val Ile  
195 200 205

Leu Val Leu Leu Ala Val Gly Gly Leu Leu Phe Tyr Arg Trp Arg Arg  
210 215 220

Arg Ser His Gln Glu Pro Gln Arg Ala Asp Ser Pro Leu Glu Gln Pro  
225 230 235 240

Glu Gly Ser Pro Leu Thr Gln Asp Asp Arg Gln Val Glu Leu Pro Val  
245 250 255

<210> 8  
<211> 554  
<212> PRT  
<213> Mus musculus

<400> 8

Met Thr Ala Pro Gly Ala Ala Gly Arg Cys Pro Pro Thr Thr Trp Leu  
1 5 10 15

Gly Ser Leu Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser Ile Thr  
 20 25 30

Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly His Leu  
 35 40 45

Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln  
 50 55 60

Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro Val Cys  
 65 70 75 80

Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu Asp Thr  
 85 90 95

Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu  
 100 105 110

Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp Tyr Glu  
 115 120 125

Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro Leu Gln  
 130 135 140

Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn Leu Leu  
 145 150 155 160

Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser Phe Ala  
 165 170 175

Glu Cys Ser Ser Gln Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu  
 180 185 190

Tyr Pro Lys Ala Ile Pro Ser Ser Asp Pro Ala Ser Val Ser Pro His  
 195 200 205

Gln Pro Leu Ala Pro Ser Met Ala Pro Val Ala Gly Leu Thr Trp Glu  
 210 215 220

Asp Ser Glu Gly Thr Glu Gly Ser Ser Leu Leu Pro Gly Glu Gln Pro  
 225 230 235 240

Leu His Thr Val Asp Pro Gly Ser Ala Lys Gln Arg Pro Pro Arg Ser  
 245 250 255

Thr Cys Gln Ser Phe Glu Pro Pro Glu Thr Pro Val Val Lys Asp Ser  
 260 265 270



Thr Ile Gly Gly Ser Pro Gln Pro Arg Pro Ser Val Gly Ala Phe Asn  
 275 280 285

Pro Gly Met Glu Asp Ile Leu Asp Ser Ala Met Gly Thr Asn Trp Val  
 290 295 300

Pro Glu Glu Ala Ser Gly Glu Ala Ser Glu Ile Pro Val Pro Gln Gly  
 305 310 315 320

Thr Glu Leu Ser Pro Ser Arg Pro Gly Gly Gly Ser Met Gln Thr Glu  
 325 330 335

Pro Ala Arg Pro Ser Asn Phe Leu Ser Ala Ser Ser Pro Leu Pro Ala  
 340 345 350

Ser Ala Lys Gly Gln Gln Pro Ala Asp Val Thr Gly Thr Ala Leu Pro  
 355 360 365

Arg Val Gly Pro Val Arg Pro Thr Gly Gln Asp Trp Asn His Thr Pro  
 370 375 380

Gln Lys Thr Asp His Pro Ser Ala Leu Leu Arg Asp Pro Pro Glu Pro  
 385 390 395 400

Gly Ser Pro Arg Ile Ser Ser Leu Arg Pro Gln Gly Leu Ser Asn Pro  
 405 410 415

Ser Thr Leu Ser Ala Gln Pro Gln Leu Ser Arg Ser His Ser Ser Gly  
 420 425 430

Ser Val Leu Pro Leu Gly Glu Leu Glu Gly Arg Arg Ser Thr Arg Asp  
 435 440 445

Arg Arg Ser Pro Ala Glu Pro Glu Gly Gly Pro Ala Ser Glu Gly Ala  
 450 455 460

Ala Arg Pro Leu Pro Arg Phe Asn Ser Val Pro Leu Thr Asp Thr Gly  
 465 470 475 480

His Glu Arg Gln Ser Glu Gly Ser Ser Ser Pro Gln Leu Gln Glu Ser  
 485 490 495

Val Phe His Leu Leu Val Pro Ser Val Ile Leu Val Leu Leu Ala Val  
 500 505 510

Gly Gly Leu Leu Phe Tyr Arg Trp Arg Arg Arg Ser His Gln Glu Pro  
 515 520 525

Gln Arg Ala Asp Ser Pro Leu Glu Gln Pro Glu Gly Ser Pro Leu Thr  
 530 535 540

Gln Asp Asp Arg Gln Val Glu Leu Pro Val  
 545 550

<210> 9  
 <211> 438  
 <212> PRT  
 <213> Mus musculus

<400> 9

Met Thr Ala Pro Gly Ala Ala Gly Arg Cys Pro Pro Thr Thr Trp Leu  
 1 5 10 15

Gly Ser Leu Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser Ile Thr  
 20 25 30

Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly His Leu  
 35 40 45

Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln  
 50 55 60

Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro Val Cys  
 65 70 75 80

Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu Asp Thr  
 85 90 95

Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu  
 100 105 110

Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp Tyr Glu  
 115 120 125

Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro Leu Gln  
 130 135 140

Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn Leu Leu  
 145 150 155 160

Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser Phe Ala  
 165 170 175

Glu Cys Ser Ser Gln Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu  
 180 185 190

Tyr Pro Lys Ala Ile Pro Ser Ser Asp Pro Ala Ser Val Ser Pro His  
 195 200 205

Gln Pro Leu Ala Pro Ser Met Ala Pro Val Ala Gly Leu Thr Trp Glu  
 210 215 220

Asp Ser Glu Gly Thr Glu Gly Ser Ser Leu Leu Pro Gly Glu Gln Pro  
 225 230 235 240

Leu His Thr Val Asp Pro Gly Ser Ala Lys Gln Arg Pro Pro Arg Ser  
 245 250 255

Thr Cys Gln Ser Phe Glu Pro Pro Glu Thr Pro Val Val Lys Asp Ser  
 260 265 270

Thr Ile Gly Gly Ser Pro Gln Pro Arg Pro Ser Val Gly Ala Phe Asn  
 275 280 285

Pro Gly Met Glu Asp Ile Leu Asp Ser Ala Met Gly Thr Asn Trp Val  
 290 295 300

Pro Glu Glu Ala Ser Gly Glu Ala Ser Glu Ile Pro Val Pro Gln Gly  
 305 310 315 320

Thr Glu Leu Ser Pro Ser Arg Pro Gly Gly Gly Ser Met Gln Thr Glu  
 325 330 335

Pro Ala Arg Pro Ser Asn Phe Leu Ser Ala Ser Ser Pro Leu Pro Ala  
 340 345 350

Ser Ala Lys Gly Gln Gln Pro Ala Asp Val Thr Gly His Glu Arg Gln  
 355 360 365

Ser Glu Gly Ser Ser Ser Pro Gln Leu Gln Glu Ser Val Phe His Leu  
 370 375 380

Leu Val Pro Ser Val Ile Leu Val Leu Leu Ala Val Gly Gly Leu Leu  
 385 390 395 400

Phe Tyr Arg Trp Arg Arg Arg Ser His Gln Glu Pro Gln Arg Ala Asp  
 405 410 415

Ser Pro Leu Glu Gln Pro Glu Gly Ser Pro Leu Thr Gln Asp Asp Arg  
 420 425 430

Gln Val Glu Leu Pro Val  
 435

<210> 10  
 <211> 441  
 <212> PRT  
 <213> Mus musculus

<400> 10

Glu Ile Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Thr Gly Thr  
 1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr  
 20 25 30

Phe Met His Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile  
 35 40 45

Gly Tyr Ile Ser Cys Tyr Asn Gly Asp Thr Asn Tyr Asn Gln Asn Phe  
 50 55 60

Lys Gly Lys Ala Thr Phe Thr Val Asp Thr Ser Ser Ser Thr Ala Tyr  
 65 70 75 80

Met Gln Phe Asn Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Glu Gly Gly Asn Tyr Pro Ala Tyr Trp Gly Gln Gly Thr Leu  
 100 105 110

Val Thr Val Ser Ala Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu  
 115 120 125

Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys  
 130 135 140

Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser  
 145 150 155 160

Gly Ser Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser  
 165 170 175

Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp  
 180 185 190

Pro Ser Glu Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr  
 195 200 205

Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys  
 210 215 220

Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys  
 225 230 235 240

Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val  
 245 250 255

Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe  
 260 265 270

Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg Glu Glu  
 275 280 285

Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His  
 290 295 300

Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala  
 305 310 315 320

Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg  
 325 330 335

Pro Lys Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met  
 340 345 350

Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro  
 355 360 365

Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn  
 370 375 380

Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val  
 385 390 395 400

Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr  
 405 410 415

Phe Thr Cys Ser Val Leu His Glu Gly Leu His Asn His His Thr Glu  
 420 425 430

Lys Ser Leu Ser His Ser Pro Gly Lys  
 435 440

<210> 11  
 <211> 214  
 <212> PRT  
 <213> Mus musculus  
 <400> 11

Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly  
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asn Val Gly Thr Ala  
 20 25 30

Val Thr Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile  
 35 40 45

Tyr Trp Thr Ser Thr Arg His Ala Gly Val Pro Asp Arg Phe Thr Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asp Val Gln Ser  
 65 70 75 80

Glu Asp Leu Ala Asp Tyr Phe Cys Gln Gln Tyr Ser Ser Tyr Pro Leu  
 85 90 95

Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ala Asp Ala Ala  
 100 105 110

Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu Thr Ser Gly  
 115 120 125

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile  
 130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu  
 145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser  
 165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr  
 180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser  
 195 200 205

Phe Asn Arg Asn Glu Cys  
 210

<210> 12  
 <211> 449  
 <212> PRT  
 <213> Mus musculus

<400> 12

Glu Val Lys Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Thr Ser Gly Phe Thr Phe Ser Asp Tyr  
 20 25 30

Tyr Met Tyr Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp Val  
 35 40 45

Ala Tyr Ile Ser Asn Gly Gly Gly Ser Thr Tyr Tyr Pro Asp Thr Val  
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr  
 65 70 75 80

Leu Gln Met Ser Arg Leu Lys Ser Glu Asp Thr Ala Met Tyr Tyr Cys  
 85 90 95

Ala Arg Gln Gly Ser Tyr Gly Tyr Pro Phe Ala Tyr Trp Gly Gln Gly  
 100 105 110

Thr Leu Val Thr Val Ser Ala Ala Lys Thr Thr Ala Pro Ser Val Tyr  
 115 120 125

Pro Leu Ala Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu  
 130 135 140

Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Leu Thr Trp  
 145 150 155 160

Asn Ser Gly Ser Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu  
 165 170 175

Gln Ser Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Ser  
 180 185 190

Thr Trp Pro Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser  
 195 200 205

Ser Thr Lys Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys  
 210 215 220

Pro Cys Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro  
 225 230 235 240

Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser  
 245 250 255

Leu Ser Pro Ile Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp  
 260 265 270

Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr  
 275 280 285

Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val  
 290 295 300

Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu  
 305 310 315 320

Phe Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg  
 325 330 335

Thr Ile Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val  
 340 345 350

Leu Pro Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr  
 355 360 365

Cys Met Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr  
 370 375 380

Asn Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu  
 385 390 395 400

Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys  
 405 410 415

Lys Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu  
 420 425 430

Gly Leu His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly  
 435 440 445

Lys

<210> 13  
 <211> 214  
 <212> PRT  
 <213> Mus musculus

<400> 13

Ala Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly  
 1 5 10 15



Asp Arg Val Thr Ile Ser Cys Ser Ala Ser Gln Gly Ile Ser Asn Tyr  
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
 35 40 45

Tyr Tyr Thr Ser Ser Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Pro  
 65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Lys Leu Pro Trp  
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Asp Ala Ala  
 100 105 110

Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu Thr Ser Gly  
 115 120 125

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile  
 130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu  
 145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser  
 165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr  
 180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser  
 195 200 205

Phe Asn Arg Asn Glu Cys  
 210

<210> 14  
 <211> 522  
 <212> PRT  
 <213> Mus musculus

<400> 14

Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
 1 5 10 15

Ser Leu Ser Leu Thr Cys Thr Val Thr Gly Tyr Ser Ile Thr Ser Asp  
 20 25 30

Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu Trp  
 35 40 45

Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu  
 50 55 60

Lys Ser Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe Phe  
 65 70 75 80

Leu Gln Leu Asn Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr Cys  
 85 90 95

Ala Arg Leu Glu Thr Trp Leu Phe Asp Tyr Trp Gly Gln Gly Thr Thr  
 100 105 110

Leu Thr Val Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu  
 115 120 125

Ala Pro Gly Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly Cys  
 130 135 140

Leu Val Lys Gly Tyr Phe Pro Glu Ser Val Thr Val Thr Trp Asn Ser  
 145 150 155 160

Gly Ser Leu Ser Ser Ser Val His Thr Phe Pro Ala Leu Leu Gln Ser  
 165 170 175

Gly Leu Tyr Thr Met Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp  
 180 185 190

Pro Ser Gln Thr Val Thr Cys Ser Val Ala His Pro Ala Ser Ser Thr  
 195 200 205

Thr Val Asp Lys Lys Leu Glu Pro Ser Gly Pro Ile Ser Thr Ile Asn  
 210 215 220

Pro Cys Pro Pro Cys Lys Glu Cys His Lys Cys Pro Ala Pro Asn Leu  
 225 230 235 240

Glu Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Asn Ile Lys Asp Val  
 245 250 255

Leu Met Ile Ser Leu Thr Pro Lys Val Thr Cys Val Val Val Asp Val  
 260 265 270

Ser Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val  
 275 280 285  
 Glu Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser  
 290 295 300  
 Thr Ile Arg Val Val Ser Thr Leu Pro Ile Gln His Gln Asp Trp Met  
 305 310 315 320  
 Ser Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ser  
 325 330 335  
 Pro Ile Glu Arg Thr Ile Ser Lys Ile Lys Gly Leu Val Arg Ala Pro  
 340 345 350  
 Gln Val Tyr Ile Leu Pro Pro Pro Ala Glu Gln Leu Ser Arg Lys Asp  
 355 360 365  
 Val Ser Leu Thr Cys Leu Val Val Gly Phe Asn Pro Gly Asp Ile Ser  
 370 375 380  
 Val Glu Trp Thr Ser Asn Gly His Thr Glu Glu Asn Tyr Lys Asp Thr  
 385 390 395 400  
 Ala Pro Val Leu Asp Ser Asp Gly Ser Tyr Phe Ile Tyr Ser Lys Leu  
 405 410 415  
 Asn Met Lys Thr Ser Lys Trp Glu Lys Thr Asp Ser Phe Ser Cys Asn  
 420 425 430  
 Val Arg His Glu Gly Leu Lys Asn Tyr Tyr Leu Lys Lys Thr Ile Ser  
 435 440 445  
 Arg Ser Pro Gly Leu Asp Leu Asp Asp Ile Cys Ala Glu Ala Lys Asp  
 450 455 460  
 Gly Glu Leu Asp Gly Leu Trp Thr Thr Ile Thr Ile Phe Ile Ser Leu  
 465 470 475 480  
 Phe Leu Leu Ser Val Cys Tyr Ser Ala Ser Val Thr Leu Phe Lys Val  
 485 490 495  
 Lys Trp Ile Phe Ser Ser Val Val Glu Leu Lys Gln Lys Ile Ser Pro  
 500 505 510  
 Asp Tyr Arg Asn Met Ile Gly Gln Gly Ala  
 515 520

<210> 15  
 <211> 214  
 <212> PRT  
 <213> Mus musculus

<400> 15

Asp Ile Leu Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly  
 1 5 10 15

Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Ser Ile Gly Thr Ser  
 20 25 30

Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile  
 35 40 45

Lys Tyr Ala Ser Glu Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Ser  
 65 70 75 80

Glu Asp Ile Ala Asp Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Thr  
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Trp Ala Asp Ala Ala  
 100 105 110

Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu Thr Ser Gly  
 115 120 125

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile  
 130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu  
 145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser  
 165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr  
 180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser  
 195 200 205

Phe Asn Arg Asn Glu Cys  
 210

<210> 16  
 <211> 5  
 <212> PRT  
 <213> Homo sapiens

<400> 16

Gly Tyr Phe Met His  
 1 5

<210> 17  
 <211> 5  
 <212> PRT  
 <213> Homo sapiens

<400> 17

Asp Tyr Tyr Met Tyr  
 1 5

<210> 18  
 <211> 6  
 <212> PRT  
 <213> Homo sapiens

<400> 18

Ser Asp Tyr Ala Trp Asn  
 1 5

<210> 19  
 <211> 17  
 <212> PRT  
 <213> Homo sapiens

<400> 19

Tyr Ile Ser Cys Tyr Asn Gly Asp Thr Asn Tyr Asn Gln Asn Phe Lys  
 1 5 10 15

Gly

<210> 20  
 <211> 17  
 <212> PRT  
 <213> Homo sapiens

<400> 20

Tyr Ile Ser Asn Gly Gly Gly Ser Thr Tyr Tyr Pro Asp Thr Val Lys  
 1 5 10 15

Gly

<210> 21  
<211> 16  
<212> PRT  
<213> Homo sapiens

<400> 21

Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu Lys Ser  
1 5 10 15

<210> 22  
<211> 8  
<212> PRT  
<213> Homo sapiens

<400> 22

Glu Gly Gly Asn Tyr Pro Ala Tyr  
1 5

<210> 23  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 23

Gln Gly Ser Tyr Gly Tyr Pro Phe Ala Tyr  
1 5 10

<210> 24  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 24

Phe Asp Tyr Ala His Ala Met Asp Tyr  
1 5

<210> 25  
<211> 8  
<212> PRT  
<213> Homo sapiens

<400> 25

Leu Glu Thr Trp Leu Phe Asp Tyr  
1 5

<210> 26  
<211> 7  
<212> PRT  
<213> Homo sapiens

<400> 26

Asp Tyr Gly Trp Phe Asp Tyr

1 5

<210> 27  
<211> 11  
<212> PRT  
<213> Homo sapiens

<400> 27

Lys Ala Ser Gln Asn Val Gly Thr Ala Val Thr  
1 5 10

<210> 28  
<211> 11  
<212> PRT  
<213> Homo sapiens

<400> 28

Ser Ala Ser Gln Gly Ile Ser Asn Tyr Leu Asn  
1 5 10

<210> 29  
<211> 11  
<212> PRT  
<213> Homo sapiens

<400> 29

Arg Ala Ser Gln Ser Ile Gly Thr Ser Ile His  
1 5 10

<210> 30  
<211> 7  
<212> PRT  
<213> Homo sapiens

<400> 30

Trp Thr Ser Thr Arg His Ala  
1 5

<210> 31  
<211> 7  
<212> PRT  
<213> Homo sapiens

<400> 31

Tyr Thr Ser Ser Leu His Ser  
1 5

<210> 32  
<211> 7  
<212> PRT  
<213> Homo sapiens

&lt;400&gt; 32

Tyr Ala Ser Glu Ser Ile Ser  
1 5

&lt;210&gt; 33

&lt;211&gt; 7

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 33

Tyr Thr Ser Glu Ser Ile Ser  
1 5

&lt;210&gt; 34

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 34

Gln Gln Tyr Ser Ser Tyr Pro Leu Thr  
1 5

&lt;210&gt; 35

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 35

Gln Gln Tyr Ser Lys Leu Pro Trp Thr  
1 5

&lt;210&gt; 36

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 36

Gln Gln Ile Asn Ser Trp Pro Thr Thr  
1 5

&lt;210&gt; 37

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 37

Gln Gln Ser Asn Ser Trp Pro Thr Thr  
1 5

&lt;210&gt; 38

&lt;211&gt; 9



<212> PRT  
<213> Homo sapiens

<400> 38

Gln Gln Tyr Ser Ser Trp Pro Thr Thr  
1 5

<210> 39  
<211> 130  
<212> PRT  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (23)..(23)  
<223> Xaa= any amino acid

<220>  
<221> misc\_feature  
<222> (27)..(27)  
<223> Xaa= any amino acid

<220>  
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<222> (29)..(29)  
<223> Xaa= any amino acid

<220>  
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<222> (31)..(36)  
<223> Xaa= any amino acid

<220>  
<221> misc\_feature  
<222> (51)..(51)  
<223> Xaa= any amino acid

<220>  
<221> misc\_feature  
<222> (56)..(57)  
<223> Xaa= any amino acid

<220>  
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<222> (59)..(59)  
<223> Xaa= any amino acid

<220>  
<221> misc\_feature  
<222> (61)..(61)  
<223> Xaa= any amino acid

<220>  
<221> misc\_feature  
<222> (84)..(84)  
<223> Xaa= any amino acid

<220>  
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<222> (86)..(86)

<223> Xaa= any amino acid

<220>

<221> misc\_feature

<222> (101)..(116)

<223> Xaa= any amino acid

<220>

<221> misc\_feature

<222> (119)..(119)

<223> Xaa= any amino acid

<220>

<221> misc\_feature

<222> (125)..(125)

<223> Xaa= any amino acid

<400> 39

Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
1 5 10 15

Thr Leu Ser Leu Thr Cys Xaa Val Ser Gly Xaa Ser Xaa Ser Xaa Xaa  
20 25 30

Xaa Xaa Xaa Xaa Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp  
35 40 45

Ile Gly Xaa Tyr Tyr Arg Ala Xaa Xaa Gly Xaa Thr Xaa Tyr Asn Pro  
50 55 60

Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln  
65 70 75 80

Phe Ser Leu Xaa Leu Xaa Ser Val Thr Ala Ala Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Ala Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
100 105 110

Xaa Xaa Xaa Xaa Phe Asp Xaa Trp Gly Gln Gly Thr Xaa Val Thr Val  
115 120 125

Ser Ser  
130

<210> 40

<211> 354

<212> DNA

<213> Homo sapiens

<400> 40

gacgtacaac ttcaagaatc tggcccaggt ctcgtaaac cttctcaaac tctctcactc 60

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acctgcactg ttactgacta ctctattaca tccgactacg cttggaactg gatccgacaa    120
tttcctggta aaaaactcga atggatgggt tatatttctt actctggctc cacctcttac    180
aatccttctc tgaaatcacg catcacaatt tcccgcgata cctctaaaaa tcaattttca    240
ctccaactca attctgttac cgccgccgat actgccacct actactgtgc ctcttttgac    300
tacgctcacg ccatggatta ttggggacag ggtactaccg ctaccgtaag ctca          354

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<210> 41
<211> 118
<212> PRT
<213> Homo sapiens

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<400> 41
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Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1           5           10           15

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Thr Leu Ser Leu Thr Cys Thr Val Thr Asp Tyr Ser Ile Thr Ser Asp
20           25           30

```

```

Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Lys Lys Leu Glu Trp
35           40           45

```

```

Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu
50           55           60

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Lys Ser Arg Ile Thr Ile Ser Arg Asp Thr Ser Lys Asn Gln Phe Ser
65           70           75           80

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Leu Gln Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Thr Tyr Tyr Cys
85           90           95

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Ala Ser Phe Asp Tyr Ala His Ala Met Asp Tyr Trp Gly Gln Gly Thr
100          105          110

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Thr Val Thr Val Ser Ser
115

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<210> 42
<211> 354
<212> DNA
<213> Homo sapiens

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<400> 42
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caagttcaac ttcaagaatc aggccccgga ctcgtaaac cctctcaaac tctctctctt    60
acttgcaactg tatccgatta ctctattact tcagactacg cttggaactg gatcagacaa    120
tttcccggaa aaggactcga atggatggga tataatctctt actctggctc aacctcttac    180
aaccctctc tcaaatctcg aataacaatc tcacgcgata cttctaaaaa tcaattctca    240

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cttcaactta actccgttac tgccgccgac actgccgttt actactgtgc ttccttcgat 300  
 tacgcccacg ctatggatta ttggggacaa ggaactaccg tcaactgtcag ctca 354

<210> 43  
 <211> 118  
 <212> PRT  
 <213> Homo sapiens

<400> 43

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
 1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Asp Tyr Ser Ile Thr Ser Asp  
 20 25 30

Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Lys Gly Leu Glu Trp  
 35 40 45

Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu  
 50 55 60

Lys Ser Arg Ile Thr Ile Ser Arg Asp Thr Ser Lys Asn Gln Phe Ser  
 65 70 75 80

Leu Gln Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Ser Phe Asp Tyr Ala His Ala Met Asp Tyr Trp Gly Gln Gly Thr  
 100 105 110

Thr Val Thr Val Ser Ser  
 115

<210> 44  
 <211> 327  
 <212> DNA  
 <213> Homo sapiens

<400> 44

gaaatagttc ttactcaatc ccccggtaca ctctcagttt ccccaggcga acgcgtcact 60  
 ttttcttgca gagcatcaca atcaatcggc atttcaattc attggatatca acaaaaaaca 120  
 ggacaggccc cagcacttct tattaaatat gcatcagaac gagccacagg catcccagac 180  
 agattttcag gttcaggatc aggcaccgat ttcacactta caatatccag agtcgaatca 240  
 gaagattttg cagattacta ttgtcaacaa ataaacagct ggcccactac attcggacaa 300  
 ggcacaaaac tcgaaattaa acgtacg 327

<210> 45  
 <211> 109  
 <212> PRT  
 <213> Homo sapiens

<400> 45

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Val Ser Pro Gly  
 1 5 10 15

Glu Arg Val Thr Phe Ser Cys Arg Ala Ser Gln Ser Ile Gly Thr Ser  
 20 25 30

Ile His Trp Tyr Gln Gln Lys Thr Gly Gln Ser Pro Arg Leu Leu Ile  
 35 40 45

Lys Tyr Ala Ser Glu Arg Ile Ser Gly Ile Pro Asp Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Val Glu Ser  
 65 70 75 80

Glu Asp Phe Ala Asp Tyr Tyr Cys Gln Gln Ile Asn Ser Trp Pro Thr  
 85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr  
 100 105

<210> 46  
 <211> 327  
 <212> DNA  
 <213> Homo sapiens

<400> 46

gaaatagttc ttactcaatc ccccggtaca ctctcagttt ccccaggcga acgcgtcact 60  
 ttttcttgca gagcatcaca atcaatcggc acttcaattc attggatatca acaaaaaaca 120  
 ggacaggccc cagcacttct tattaaatat gcatcagaac gagccacagg catcccagac 180  
 agattttcag gttcaggatc aggcaccgat ttcacactta caatatccag agtcgaatca 240  
 gaagattttg cagattacta ttgtcaacaa ataaacagct ggcccactac attcggacaa 300  
 ggcacaaaac tcgaaattaa acgtacg 327

<210> 47  
 <211> 109  
 <212> PRT  
 <213> Homo sapiens

<400> 47

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Val Ser Pro Gly  
 1 5 10 15

Glu Arg Val Thr Phe Ser Cys Arg Ala Ser Gln Ser Ile Gly Thr Ser  
20 25 30

Ile His Trp Tyr Gln Gln Lys Thr Gly Gln Ala Pro Arg Leu Leu Ile  
35 40 45

Lys Tyr Ala Ser Glu Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly  
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Val Glu Ser  
65 70 75 80

Glu Asp Phe Ala Asp Tyr Tyr Cys Gln Gln Ile Asn Ser Trp Pro Thr  
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr  
100 105

<210> 48  
<211> 109  
<212> PRT  
<213> Homo sapiens

<400> 48

Asp Ile Leu Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly  
1 5 10 15

Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Ser Ile Gly Thr Ser  
20 25 30

Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile  
35 40 45

Lys Tyr Ala Ser Glu Ser Ile Ser Gly Ile Pro Asp Arg Phe Ser Gly  
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Val Glu Ser  
65 70 75 80

Glu Asp Phe Ala Asp Tyr Tyr Cys Gln Gln Ile Asn Ser Trp Pro Thr  
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr  
100 105

<210> 49  
<211> 111  
<212> PRT

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (98)..(98)

<223> Xaa= any amino acid

<400> 49

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly  
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser  
20 25 30

Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu  
35 40 45

Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu  
65 70 75 80

Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro  
85 90 95

Pro Xaa Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr  
100 105 110

<210> 50

<211> 108

<212> PRT

<213> Homo sapiens

<400> 50

Asp Val Val Met Thr Gln Ser Pro Ala Phe Leu Ser Val Thr Pro Gly  
1 5 10 15

Glu Lys Val Thr Ile Thr Cys Gln Ala Ser Glu Gly Ile Gly Asn Tyr  
20 25 30

Leu Tyr Trp Tyr Gln Gln Lys Pro Asp Gln Ala Lys Leu Leu Ile Lys  
35 40 45

Tyr Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly Ser  
50 55 60

Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Glu Ala Glu  
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Gly Asn Lys His Pro Leu Thr  
                   85                                  90                                  95

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr  
                   100                                  105

<210> 51  
 <211> 109  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Low Risk Light Chain vs. VK6 Subgroup 2-1-(1) A14:

<400> 51

Asp Ile Val Leu Thr Gln Ser Pro Ala Phe Leu Ser Val Thr Pro Gly  
   1                  5                                  10                                  15

Glu Lys Val Thr Phe Thr Cys Gln Ala Ser Gln Ser Ile Gly Thr Ser  
                   20                                  25                                  30

Ile His Trp Tyr Gln Gln Lys Thr Asp Gln Ser Pro Arg Leu Leu Ile  
                   35                                  40                                  45

Lys Tyr Ala Ser Glu Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly  
                   50                                  55                                  60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Val Glu Ala  
   65                                  70                                  75                                  80

Glu Asp Ala Ala Asp Tyr Tyr Cys Gln Gln Ile Asn Ser Trp Pro Thr  
                   85                                  90                                  95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Thr  
                   100                                  105

<210> 52  
 <211> 327  
 <212> DNA  
 <213> Homo sapiens

<400> 52  
 gacatagttc tcacacaatc accagcattc ctctcagtta caccgcgcga aaaagtaacc 60  
 ttacactgtc aggcttctca atctatcggc acttctattc actggtatca acaaaaaacc 120  
 gatcaagctc ctaaactcct cataaaatac gcatccgaat ccatctccgg tatccccctc 180  
 agattttcag gctccggctc cggcacagat ttcaccctta ccattagctc agttgaagcc 240  
 gaagacgcag ctgattacta ctgtcaacaa ataaactcat ggccactac tttcggcggc 300



ggcactaaac tcgaaataaa acgtacg

327

<210> 53  
 <211> 109  
 <212> PRT  
 <213> Homo sapiens

<400> 53

Asp Ile Val Leu Thr Gln Ser Pro Ala Phe Leu Ser Val Thr Pro Gly  
 1 5 10 15

Glu Lys Val Thr Phe Thr Cys Gln Ala Ser Gln Ser Ile Gly Thr Ser  
 20 25 30

Ile His Trp Tyr Gln Gln Lys Thr Asp Gln Ala Pro Lys Leu Leu Ile  
 35 40 45

Lys Tyr Ala Ser Glu Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Val Glu Ala  
 65 70 75 80

Glu Asp Ala Ala Asp Tyr Tyr Cys Gln Gln Ile Asn Ser Trp Pro Thr  
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Thr  
 100 105

<210> 54  
 <211> 99  
 <212> PRT  
 <213> Homo sapiens

<400> 54

Asp Ile Leu Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly  
 1 5 10 15

Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Ser Ile Gly Thr Ser  
 20 25 30

Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile  
 35 40 45

Lys Tyr Ala Ser Glu Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Ser  
 65 70 75 80

Glu Asp Ile Ala Asp Tyr Tyr Cys Gln Gln Ile Asn Ser Trp Pro Thr  
                     85                    90                    95

Thr Phe Gly

<210> 55  
 <211> 95  
 <212> PRT  
 <213> Homo sapiens  
 <400> 55

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1                    5                    10                    15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr  
                     20                    25                    30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
                     35                    40                    45

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly  
                     50                    55                    60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65                    70                    75                    80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro  
                     85                    90                    95

<210> 56  
 <211> 101  
 <212> PRT  
 <213> Homo sapiens  
 <400> 56

Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Pro Gly  
 1                    5                    10                    15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Asp Ser  
                     20                    25                    30

Asp Asp Gly Asn Thr Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln  
                     35                    40                    45

Ser Pro Gln Leu Leu Ile Tyr Thr Leu Ser Tyr Arg Ala Ser Gly Val  
                     50                    55                    60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys  
65 70 75 80

Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln  
85 90 95

Arg Ile Glu Phe Pro  
100

<210> 57  
<211> 96  
<212> PRT  
<213> Homo sapiens

<400> 57

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly  
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser  
20 25 30

Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu  
35 40 45

Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu  
65 70 75 80

Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro  
85 90 95

<210> 58  
<211> 101  
<212> PRT  
<213> Homo sapiens

<400> 58

Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly  
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser  
20 25 30

Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
35 40 45

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val

50

55

60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
65 70 75 80

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val, Tyr Tyr Cys Gln Gln  
85 90 95

Tyr Tyr Ser Thr Pro  
100

<210> 59  
<211> 95  
<212> PRT  
<213> Homo sapiens

<400> 59

Glu Thr Thr Leu Thr Gln Ser Pro Ala Phe Met Ser Ala Thr Pro Gly  
1 5 10 15

Asp Lys Val Asn Ile Ser Cys Lys Ala Ser Gln Asp Ile Asp Asp Asp  
20 25 30

Met Asn Trp Tyr Gln Gln Lys Pro Gly Glu Ala Ala Ile Phe Ile Ile  
35 40 45

Gln Glu Ala Thr Thr Leu Val Pro Gly Ile Pro Pro Arg Phe Ser Gly  
50 55 60

Ser Gly Tyr Gly Thr Asp Phe Thr Leu Thr Ile Asn Asn Ile Glu Ser  
65 70 75 80

Glu Asp Ala Ala Tyr Tyr Phe Cys Leu Gln His Asp Asn Phe Pro  
85 90 95

<210> 60  
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<213> Homo sapiens

<400> 60

Glu Ile Val Leu Thr Gln Ser Pro Asp Phe Gln Ser Val Thr Pro Lys  
1 5 10 15

Glu Lys Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Gly Ser Ser  
20 25 30

• Leu His Trp Tyr Gln Gln Lys Pro Asp Gln Ser Pro Lys Leu Leu Ile  
35 40 45

Lys Tyr Ala Ser Gln Ser Phe Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Glu Ala  
 65 70 75 80

Glu Asp Ala Ala Thr Tyr Tyr Cys His Gln Ser Ser Ser Leu Pro  
 85 90 95

<210> 61  
 <211> 52  
 <212> PRT  
 <213> Mus musculus

<400> 61

Asp Ile Leu Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly  
 1 5 10 15

Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Ser Ile Gly Thr Ser  
 20 25 30

Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile  
 35 40 45

Lys Tyr Ala Ser  
 50

<210> 62  
 <211> 57  
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<400> 62

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Leu Val Xaa Xaa  
 20 25 30

Xaa Ile Ser Xaa Xaa Leu Xaa Trp Tyr Gln Gln Lys Pro Gly Lys Ala  
 35 40 45

Pro Lys Leu Leu Ile Tyr Xaa Ala Ser  
 50 55

<210> 63  
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 <223> Xaa= any amino acid

<400> 63

Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly  
 1 5 10 15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser  
 20 25 30

Xaa Asp Gly Xaa Xaa Tyr Leu Asn Trp Tyr Leu Gln Lys Pro Gly Gln  
 35 40 45

Ser Pro Gln Leu Leu Ile Tyr Xaa Xaa Ser  
 50 55

<210> 64  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<400> 64

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly

1                    5                    10                    15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser  
                   20                    25                    30

Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu  
                   35                    40                    45

Ile Tyr Gly Ala Ser  
                   50

<210> 65  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 65

Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly  
 1                    5                    10                    15

Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser  
                   20                    25                    30

Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
                   35                    40                    45

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser  
                   50                    55

<210> 66  
 <211> 52  
 <212> PRT  
 <213> Homo sapiens

<400> 66

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1                    5                    10                    15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr  
                   20                    25                    30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
                   35                    40                    45

Tyr Ala Ala Ser  
                   50

<210> 67  
 <211> 58

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 67

Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Pro Gly  
 1 5 10 15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Asp Ser  
 20 25 30

Asp Asp Gly Asn Thr Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln  
 35 40 45

Ser Pro Gln Leu Leu Ile Tyr Thr Leu Ser  
 50 55

&lt;210&gt; 68

&lt;211&gt; 53

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 68

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly  
 1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser  
 20 25 30

Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu  
 35 40 45

Ile Tyr Gly Ala Ser  
 50

&lt;210&gt; 69

&lt;211&gt; 58

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 69

Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly  
 1 5 10 15

Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser  
 20 25 30

Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 35 40 45



Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser  
50 55

<210> 70  
<211> 52  
<212> PRT  
<213> Homo sapiens

<400> 70

Glu Thr Thr Leu Thr Gln Ser Pro Ala Phe Met Ser Ala Thr Pro Gly  
1 5 10 15

Asp Lys Val Asn Ile Ser Cys Lys Ala Ser Gln Asp Ile Asp Asp Asp  
20 25 30

Met Asn Trp Tyr Gln Gln Lys Pro Gly Glu Ala Ala Ile Phe Ile Ile  
35 40 45

Gln Glu Ala Thr  
50

<210> 71  
<211> 52  
<212> PRT  
<213> Homo sapiens

<400> 71

Glu Ile Val Leu Thr Gln Ser Pro Asp Phe Gln Ser Val Thr Pro Lys  
1 5 10 15

Glu Lys Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Gly Ser Ser  
20 25 30

Leu His Trp Tyr Gln Gln Lys Pro Asp Gln Ser Pro Lys Leu Leu Ile  
35 40 45

Lys Tyr Ala Ser  
50

<210> 72  
<211> 57  
<212> PRT  
<213> Mus musculus

<400> 72

Glu Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly  
1 5 10 15

Thr Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Ser Glu Asp Ile Ala  
20 25 30

Asp Tyr Tyr Cys Gln Gln Ile Asn Ser Trp Pro Thr Thr Phe Gly Gly  
           35                          40                          45

Gly Thr Lys Leu Glu Ile Lys Arg Ala  
       50                          55

<210> 73  
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 <223> Xaa= any amino acid

<220>  
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 <223> Xaa= any amino acid

<400> 73

Xaa Leu Xaa Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly  
 1                  5                  10                  15

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala  
           20                          25                          30

Thr Tyr Tyr Cys Gln Gln Xaa Xaa Xaa Xaa Pro Glu Xaa Thr Phe Gly  
           35                          40                          45

Gln Gly Thr Lys Val Glu Ile Lys Arg Thr  
       50                          55

<210> 74  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<220>  
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 <223> Xaa= any amino acid

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 <223> Xaa= any amino acid

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 <222> (45)..(45)  
 <223> Xaa= any amino acid

<400> 74

Asn Arg Xaa Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly  
 1 5 10 15

Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly  
 20 25 30

Val Tyr Tyr Cys Met Gln Ala Xaa Gln Xaa Pro Arg Xaa Thr Phe Gly  
 35 40 45

Gln Gly Thr Lys Val Glu Ile Lys Arg Thr  
 50 55

<210> 75  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

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 <223> Xaa= any amino acid

<400> 75

Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly  
 1 5 10 15

Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala  
 20 25 30

Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Pro Xaa Thr Phe Gly  
 35 40 45

Gln Gly Thr Lys Val Glu Ile Lys Arg Thr  
 50 55

<210> 76

<211> 57  
 <212> PRT  
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 <223> Xaa= any amino acid

<400> 76

Thr Arg Glu Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly  
 1 5 10 15

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala  
 20 25 30

Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr Pro Xaa Thr Phe Gly Gln  
 35 40 45

Gly Thr Lys Val Glu Ile Lys Arg Thr  
 50 55

<210> 77  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 77

Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly  
 1 5 10 15

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala  
 20 25 30

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Leu Thr Phe Gly Gly  
 35 40 45

Gly Thr Lys Val Glu Ile Lys Arg Thr  
 50 55

<210> 78  
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 <213> Homo sapiens

<400> 78

Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly  
 1 5 10 15

Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly

20

25

30

Val Tyr Tyr Cys Met Gln Arg Ile Glu Phe Pro Leu Thr Phe Gly Gly  
           35                          40                          45

Gly Thr Lys Val Glu Ile Lys Arg Thr  
       50                          55

<210> 79  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 79

Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly  
 1                          5                          10                          15

Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala  
           20                          25                          30

Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly Gly  
           35                          40                          45

Gly Thr Lys Val Glu Ile Lys Arg Thr  
       50                          55

<210> 80  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 80

Thr Arg Glu Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly  
 1                          5                          10                          15

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala  
           20                          25                          30

Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr Pro Leu Thr Phe Gly Gly  
           35                          40                          45

Gly Thr Lys Val Glu Ile Lys Arg Thr  
       50                          55

<210> 81  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 81

Thr Leu Val Pro Gly Ile Pro Pro Arg Phe Ser Gly Ser Gly Tyr Gly  
 1 5 10 15

Thr Asp Phe Thr Leu Thr Ile Asn Asn Ile Glu Ser Glu Asp Ala Ala  
 20 25 30

Tyr Tyr Phe Cys Leu Gln His Asp Asn Phe Pro Leu Thr Phe Gly Gly  
 35 40 45

Gly Thr Lys Val Glu Ile Lys Arg Thr  
 50 55

<210> 82  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 82

Gln Ser Phe Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly  
 1 5 10 15

Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala  
 20 25 30

Thr Tyr Tyr Cys His Gln Ser Ser Ser Leu Pro Leu Thr Phe Gly Gly  
 35 40 45

Gly Thr Lys Val Glu Ile Lys Arg Thr  
 50 55

<210> 83  
 <211> 101  
 <212> PRT  
 <213> Homo sapiens

<400> 83

Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
 1 5 10 15

Ser Leu Ser Leu Thr Cys Thr Val Thr Asp Tyr Ser Ile Thr Ser Asp  
 20 25 30

Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu Trp  
 35 40 45

Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu  
 50 55 60

Lys Ser Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe Phe



Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser  
 50 55 60

Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn Gln Val  
 65 70 75 80

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr  
 85 90 95

Cys Ala His Arg  
 100

<210> 86  
 <211> 98  
 <212> PRT  
 <213> Homo sapiens

<400> 86

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
 20 25 30

Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45

Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val  
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr  
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg

<210> 87  
 <211> 98  
 <212> PRT  
 <213> Homo sapiens

<400> 87

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gly  
 1 5 10 15



Thr Leu Ser Leu Thr Cys Ala Val Ser Gly Gly Ser Ile Ser Ser Ser  
                   20                  25                  30

Asn Trp Trp Ser Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp  
           35                  40                  45

Ile Gly Glu Ile Tyr His Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu  
       50                  55                  60

Lys Ser Arg Val Thr Ile Ser Val Asp Lys Ser Lys Asn Gln Phe Ser  
   65                  70                  75                  80

Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys  
                   85                  90                  95

Ala Arg

<210> 88  
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 <212> PRT  
 <213> Homo sapiens

<400> 88

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu  
   1                  5                  10                  15

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr  
           20                  25                  30

Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met  
       35                  40                  45

Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser Pro Ser Phe  
       50                  55                  60

Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr  
   65                  70                  75                  80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys  
                   85                  90                  95

Ala Arg

<210> 89  
 <211> 101  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 89

Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
 1 5 10 15

Thr Leu Ser Leu Thr Cys Ala Ile Ser Gly Asp Ser Val Ser Ser Asn  
 20 25 30

Ser Ala Ala Trp Asn Trp Ile Arg Gln Ser Pro Ser Arg Gly Leu Glu  
 35 40 45

Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr Asn Asp Tyr Ala  
 50 55 60

Val Ser Val Lys Ser Arg Ile Thr Ile Asn Pro Asp Thr Ser Lys Asn  
 65 70 75 80

Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val  
 85 90 95

Tyr Tyr Cys Ala Arg  
 100

&lt;210&gt; 90

&lt;211&gt; 98

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 90

Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
 20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Asn Pro Thr Tyr Ala Gln Gly Phe  
 50 55 60

Thr Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr  
 65 70 75 80

Leu Gln Ile Cys Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg

<210> 91  
 <211> 58  
 <212> PRT  
 <213> Mus musculus

<400> 91

Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
 1 5 10 15

Ser Leu Ser Leu Thr Cys Thr Val Thr Asp Tyr Ser Ile Thr Ser Asp  
 20 25 30

Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu Trp  
 35 40 45

Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr  
 50 55

<210> 92  
 <211> 59  
 <212> PRT  
 <213> Homo sapiens

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 <223> Xaa= any amino acid

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 <223> Xaa= any amino acid

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 <223> Xaa= any amino acid

<220>  
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 <222> (50)..(50)  
 <223> Xaa= any amino acid

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<223> Xaa= any amino acid

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<221> misc\_feature

<222> (55)..(56)

<223> Xaa= any amino acid

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<221> misc\_feature

<222> (58)..(58)

<223> Xaa= any amino acid

<400> 92

Xaa Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Xaa  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Xaa Ser Tyr  
20 25 30

Xaa Ile Xaa Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45

Gly Xaa Ile Xaa Pro Tyr Xaa Xaa Gly Xaa Thr  
50 55

<210> 93

<211> 62

<212> PRT

<213> Homo sapiens

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<223> Xaa= any amino acid

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<221> misc\_feature

<222> (52)..(52)

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<222> (58)..(59)  
 <223> Xaa= any amino acid

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 <222> (61)..(61)  
 <223> Xaa= any amino acid

<400> 93

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
 1 5 10 15

Thr Leu Ser Leu Thr Cys Xaa Val Ser Gly Xaa Ser Xaa Ser Ser Xaa  
 20 25 30

Xaa Xaa Xaa Xaa Xaa Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu  
 35 40 45

Trp Ile Gly Xaa Ile Tyr Tyr Arg Ala Xaa Xaa Gly Xaa Thr  
 50 55 60

<210> 94  
 <211> 60  
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&lt;222&gt; (58)..(59)

&lt;223&gt; Xaa= any amino acid

&lt;400&gt; 94

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Xaa Tyr  
 20 25 30

Xaa Met Xaa Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45

Xaa Xaa Ile Xaa Xaa Lys Xaa Xaa Gly Xaa Xaa Thr  
 50 55 60

&lt;210&gt; 95

&lt;211&gt; 58

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 95

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45

Gly Trp Ile Asn Pro Asn Ser Gly Gly Thr  
 50 55

&lt;210&gt; 96

&lt;211&gt; 59

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 96

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln  
 1 5 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser  
 20 25 30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu  
 35 40 45

Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys  
50 55

<210> 97  
<211> 58  
<212> PRT  
<213> Homo sapiens

<400> 97

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
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Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys  
50 55

<210> 98  
<211> 58  
<212> PRT  
<213> Homo sapiens

<400> 98

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gly  
1 5 10 15

Thr Leu Ser Leu Thr Cys Ala Val Ser Gly Gly Ser Ile Ser Ser Ser  
20 25 30

Asn Trp Trp Ser Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp  
35 40 45

Ile Gly Glu Ile Tyr His Ser Gly Ser Thr  
50 55

<210> 99  
<211> 58  
<212> PRT  
<213> Homo sapiens

<400> 99

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu  
1 5 10 15

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr  
20 25 30

Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met  
           35                          40                          45

Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr  
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<210> 100  
 <211> 61  
 <212> PRT  
 <213> Homo sapiens

<400> 100

Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
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Thr Leu Ser Leu Thr Cys Ala Ile Ser Gly Asp Ser Val Ser Ser Asn  
           20                          25                          30

Ser Ala Ala Trp Asn Trp Ile Arg Gln Ser Pro Ser Arg Gly Leu Glu  
           35                          40                          45

Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr Asn  
       50                          55                          60

<210> 101  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 101

Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala  
 1                  5                          10                          15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
           20                          25                          30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
           35                          40                          45

Gly Trp Ile Asn Thr Asn Thr Gly Asn Pro  
       50                          55

<210> 102  
 <211> 60  
 <212> PRT  
 <213> Mus musculus

<400> 102

Ser Tyr Asn Pro Ser Leu Lys Ser Arg Ile Ser Ile Thr Arg Asp Thr



1                      5                      10                      15

Ser Lys Asn Gln Phe Phe Leu Gln Leu Asn Ser Val Thr Thr Glu Asp  
                     20                      25                      30

Thr Ala Thr Tyr Tyr Cys Ala Ser Phe Asp Tyr Ala His Ala Met Asp  
                     35                      40                      45

Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
                     50                      55                      60

<210> 103  
 <211> 70  
 <212> PRT  
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 <223> Xaa= any amino acid

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 <223> Xaa= any amino acid

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<400> 103

Asn Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Xaa Asp Xaa  
 1                      5                      10                      15

Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Xaa Asp  
                     20                      25                      30

Thr Ala Val Tyr Tyr Cys Ala Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
                     35                      40                      45

Xaa Xaa Xaa Xaa Xaa Asp Xaa Xaa Phe Asp Xaa Trp Gly Gln Gly Thr  
 50 55 60

Leu Val Thr Val Ser Ser  
 65 70

<210> 104  
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 <223> Xaa= any amino acid

<400> 104

Xaa Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr  
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Ser Lys Asn Gln Phe Ser Leu Xaa Leu Xaa Ser Val Thr Ala Ala Asp  
 20 25 30

Thr Ala Val Tyr Tyr Cys Ala Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Phe Asp Xaa Trp Gly Gln Gly Thr  
 50 55 60

Xaa Val Thr Val Ser Ser  
65 70

<210> 105  
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<220>  
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<223> Xaa= any amino acid

<400> 105

Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn  
1 5 10 15

Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp  
20 25 30

Thr Ala Val Tyr Tyr Cys Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
35 40 45

Xaa Xaa Xaa Xaa Tyr Tyr Xaa Xaa Phe Asp Xaa Trp Gly Gln Gly Thr  
50 55 60

Leu Val Thr Val Ser Ser  
65 70

<210> 106  
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<212> PRT  
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<400> 106

Asn Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Arg Asp Thr  
1 5 10 15

Ser Ile Ser Thr Ala Tyr Met Glu Leu Ser Arg Leu Arg Ser Asp Asp  
 20 25 30

Thr Ala Val Tyr Tyr Cys Ala Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
 50 55 60

Leu Val Thr Val Ser Ser  
 65 70

<210> 107  
 <211> 70  
 <212> PRT  
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<220>  
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 <223> Xaa= any amino acid

<400> 107

Arg Tyr Ser Pro Ser Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr  
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Ser Lys Asn Gln Val Val Leu Thr Met Thr Asn Met Asp Pro Val Asp  
 20 25 30

Thr Ala Thr Tyr Tyr Cys Ala His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
 50 55 60

Leu Val Thr Val Ser Ser  
 65 70

<210> 108  
 <211> 70  
 <212> PRT  
 <213> Homo sapiens

<220>  
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 <222> (41)..(55)  
 <223> Xaa= any amino acid

<400> 108

Tyr Tyr Val Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn

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<210> 109
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<223> Xaa= any amino acid
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<400> 109

Asn Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Lys  
1 5 10 15

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp  
20 25 30

Thr Ala Val Tyr Tyr Cys Ala Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
50 55 60

Leu Val Thr Val Ser Ser  
65 70

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Arg Tyr Ser Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys  
 1 5 10 15

Ser Ile Ser Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp  
 20 25 30

Thr Ala Met Tyr Tyr Cys Ala Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
 50 55 60

Leu Val Thr Val Ser Ser  
 65 70

&lt;210&gt; 111

&lt;211&gt; 70

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (41)..(55)

&lt;223&gt; Xaa= any amino acid

&lt;400&gt; 111

Asp Tyr Ala Val Ser Val Lys Ser Arg Ile Thr Ile Asn Pro Asp Thr  
 1 5 10 15

Ser Lys Asn Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro Glu Asp  
 20 25 30

Thr Ala Val Tyr Tyr Cys Ala Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
 50 55 60

Leu Val Thr Val Ser Ser  
 65 70

&lt;210&gt; 112

&lt;211&gt; 70

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (41)..(55)

&lt;223&gt; Xaa= any amino acid

&lt;400&gt; 112

Thr Tyr Ala Gln Gly Phe Thr Gly Arg Phe Val Phe Ser Leu Asp Thr  
 1 5 10 15

Ser Val Ser Thr Ala Tyr Leu Gln Ile Cys Ser Leu Lys Ala Glu Asp  
 20 25 30

Thr Ala Val Tyr Tyr Cys Ala Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
 50 55 60

Leu Val Thr Val Ser Ser  
 65 70

&lt;210&gt; 113

&lt;211&gt; 1404

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 113

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 ggcgtggagg tgcataatgc caagacaaag ccgcgggagg agcagtacaa cagcacgtac 960

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gacggctcct tcttctctta tagcaagctc accgtggaca agagcagggtg gcagcagggg 1320
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ctctccctgt ccccgggtaa atga 1404

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<210> 114
<211> 467
<212> PRT
<213> Homo sapiens

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<400> 114

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Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
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Val His Ser Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys
          20           25           30

```

```

Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Thr Asp Tyr Ser Ile
          35           40           45

```

```

Thr Ser Asp Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Lys Lys
          50           55           60

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Leu Glu Trp Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Tyr Asn
65           70           75           80

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```

Pro Ser Leu Lys Ser Arg Ile Thr Ile Ser Arg Asp Thr Ser Lys Asn
          85           90           95

```

```

Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Thr
          100           105           110

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```

Tyr Tyr Cys Ala Ser Phe Asp Tyr Ala His Ala Met Asp Tyr Trp Gly
          115           120           125

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Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
          130           135           140

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Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
145           150           155           160

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Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val  
 165 170 175

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala  
 180 185 190

Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val  
 195 200 205

Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His  
 210 215 220

Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser Cys  
 225 230 235 240

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
 245 250 255

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
 260 265 270

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 275 280 285

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 290 295 300

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr  
 305 310 315 320

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 325 330 335

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 340 345 350

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
 355 360 365

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
 370 375 380

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 385 390 395 400

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
 405 410 415

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
 420 425 430

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
 435 440 445

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
 450 455 460

Pro Gly Lys  
 465

<210> 115  
 <211> 1404  
 <212> DNA  
 <213> Homo sapiens

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 aacgtgaatc acaagcccag caacaccaag gtggacaaga gagttgagcc caaatcttgt 720  
 gacaaaactc acacatgtcc accgtgccc gcacctgaac tcctgggggg accgtcagtc 780  
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 ggcgtggagg tgcataatgc caagacaaag ccgcgggagg agcagtacaa cagcacgtac 960  
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<210> 116  
 <211> 467  
 <212> PRT  
 <213> Homo sapiens  
 <400> 116

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Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Asp Tyr Ser Ile  
 35 40 45

Thr Ser Asp Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Lys Gly  
 50 55 60

Leu Glu Trp Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Tyr Asn  
 65 70 75 80

Pro Ser Leu Lys Ser Arg Ile Thr Ile Ser Arg Asp Thr Ser Lys Asn  
 85 90 95

Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val  
 100 105 110

Tyr Tyr Cys Ala Ser Phe Asp Tyr Ala His Ala Met Asp Tyr Trp Gly  
 115 120 125

Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser  
 130 135 140

Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala  
 145 150 155 160

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val  
 165 170 175

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala  
 180 185 190

Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val

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210	215	220
Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser Cys		
225	230	235
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly		
	245	250
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met		
	260	265
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His		
	275	280
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val		
	290	295
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr		
305	310	315
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly		
	325	330
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile		
	340	345
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val		
	355	360
Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser		
	370	375
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu		
385	390	395
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro		
	405	410
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val		
	420	425
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met		
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 450 455 460

Pro Gly Lys  
 465

<210> 117  
 <211> 2002  
 <212> DNA  
 <213> Homo sapiens

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Tyr Tyr Cys Ala Ser Phe Asp Tyr Ala His Ala Met Asp Tyr Trp Gly
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Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala

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Tyr Ala Trp Asn Trp Ile Xaa Gln Xaa Xaa Xaa Xaa Xaa Leu Xaa Trp  
 35 40 45

Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Xaa Asn Xaa Xaa Leu  
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 65 70 75 80

Leu Xaa Leu Xaa Xaa Val Xaa Xaa Xaa Asp Xaa Ala Xaa Tyr Tyr Cys  
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Tyr Ala Trp Asn Trp Ile Arg Gln Xaa Pro Xaa Xaa Lys Leu Glu Trp

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Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu  
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Lys Xaa Arg Ile Xaa Ile Xaa Arg Xaa Thr Xaa Xaa Asn Xaa Phe Xaa  
 65 70 75 80

Leu Xaa Leu Xaa Xaa Val Xaa Xaa Xaa Asp Xaa Ala Thr Tyr Tyr Cys  
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Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Xaa Xaa Leu Glu Trp  
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Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu  
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Lys Ser Arg Ile Xaa Ile Xaa Arg Asp Thr Ser Lys Asn Gln Phe Xaa  
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Leu Gln Leu Asn Ser Val Thr Xaa Xaa Asp Thr Ala Xaa Tyr Tyr Cys  
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35 40 45

Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu  
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Lys Ser Arg Ile Xaa Ile Xaa Arg Asp Thr Ser Lys Asn Gln Phe Xaa  
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Ile His Trp Tyr Gln Gln Xaa Thr Xaa Xaa Ser Pro Arg Leu Leu Ile  
           35                                  40                                  45

Lys Tyr Ala Ser Glu Xaa Ile Ser Xaa Ile Pro Xaa Arg Phe Xaa Gly  
       50                                  55                                  60

Xaa Gly Xaa Gly Xaa Xaa Phe Xaa Leu Xaa Ile Xaa Xaa Val Xaa Xaa  
   65                                  70                                  75                                  80

Xaa Asp Xaa Ala Asp Tyr Tyr Cys Gln Gln Ile Asn Ser Trp Pro Thr  
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20 25 30

Ile His Trp Tyr Gln Gln Xaa Thr Xaa Xaa Xaa Pro Arg Leu Leu Ile  
35 40 45

Lys Tyr Ala Ser Glu Xaa Xaa Xaa Gly Ile Pro Xaa Arg Phe Ser Gly  
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Xaa Ile Xaa Xaa Val Glu Ser  
65 70 75 80

Glu Asp Xaa Ala Asp Tyr Tyr Cys Gln Gln Ile Asn Ser Trp Pro Thr  
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Thr Phe Gly Xaa Gly Thr Lys Leu Glu Ile Lys Arg Xaa  
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Ile His Trp Tyr Gln Gln Xaa Thr Xaa Xaa Ser Pro Arg Leu Leu Ile  
35 40 45

Lys Tyr Ala Ser Glu Xaa Ile Ser Gly Ile Pro Xaa Arg Phe Ser Gly  
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Xaa Ile Xaa Xaa Val Glu Ser  
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Glu Asp Xaa Ala Asp Tyr Tyr Cys Gln Gln Ile Asn Ser Trp Pro Thr  
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Ile His Trp Tyr Gln Gln Xaa Thr Xaa Xaa Xaa Pro Arg Leu Leu Ile  
 35 40 45

Lys Tyr Ala Ser Glu Ser Ile Ser Gly Ile Pro Xaa Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Xaa Ile Xaa Xaa Val Glu Ser  
 65 70 75 80

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20 25 30

Tyr Ala Trp Asn Trp Ile Xaa Gln Xaa Xaa Xaa Xaa Xaa Leu Xaa Trp  
35 40 45

Met Gly Tyr Ile Ser Tyr Ser Gly Ser Thr Ser Xaa Asn Xaa Xaa Leu  
50 55 60

Xaa Xaa Xaa Ile Xaa Ile Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Phe Xaa  
65 70 75 80

Leu Xaa Leu Xaa Xaa Val Xaa Xaa Xaa Asp Xaa Ala Xaa Tyr Tyr Cys  
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20 25 30

Ile His Trp Tyr Xaa Gln Xaa Xaa Xaa Xaa Xaa Pro Xaa Leu Leu Ile  
35 40 45

Lys Tyr Ala Ser Glu Xaa Xaa Xaa Xaa Ile Xaa Xaa Xaa Phe Xaa Gly  
50 55 60

Xaa Gly Xaa Gly Xaa Xaa Phe Xaa Leu Xaa Ile Xaa Xaa Val Xaa Xaa  
65 70 75 80

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Thr Phe Gly Xaa Gly Thr Xaa Leu Xaa Xaa Xaa Xaa Xaa  
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agatttttcag gttcaggatc aggcaccgat ttcacactta caatatccag agtcgaatca 240

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Glu Arg Val Thr Phe Ser Cys Arg Ala Ser Gln Ser Ile Gly Thr Ser  
 20 25 30

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 35 40 45

Lys Tyr Ala Ser Glu Ser Ile Ser Gly Ile Pro Asp Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Val Glu Ser  
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